The Sonora Astronomical Society's
SONORAN STARRY NIGHTS

OCTOBER 2025

October Meeting Details

DATE: October 11th, 2025
MEETING TIME:12:30 PM (12:00 acess)
PLACE: Sahuarita Library & Zoom
MEETING SCHEDULE:
(12:15 PM ZOOM Waiting Room Available)
12:30 Meeting Intro and Welcome
12:40 Featured Presentation Followed by Club Activities/Business

October Presentation

Speaker: Speaker and topic will be announced at the meeting

Subject: To be announced at the Meeting
Abstract: .
Biography:

Next Member Star Parties

DATE: Thursday, October 23rd, 2025
TIME: 5:30 PM *NEW LOCATION*
PLACE: Madera Canyon Parking Lot
(300 ft past 9 mile marker, Madera Canyon Rd)

- LOOKING AHEAD -
THE FOLLOWING STAR PARTY WILL BE:
DATE: Thursday, November 20th, 2025
TIME: 5:15 PM
PLACE: Madera Canyon Parking Lot

NOTE: If you have a telescope that you don't know how to use, or are looking to buy a telescope and want to compare different telescopes, join us at a star party and we can give you some help.

UPCOMING EVENTS

NEXT CLUB MEETING
DATE: November 15th, 2025
LOCATION: Sahuarita Library & Zoom
TIME: 2:30 PM (in person + Zoom)
Speaker: T B A
Subject: T B A

WHAT NEXT?

NASA's Night Sky Network has a live YouTube Webinar each month (and a video that can be viewed if you missed the live presentation) featuring an interesting array of subjects.
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The October 22nd topic is:
A Storm of Stars with Dr. Shane Larson

Details and the YouTube link can be found on our website, News & Letters page, and on the Events page/Calendar @
https://sonoraastronomicalsociety.org/

Or you can search the internet for YouTube, then Night Sky Network, for the videos, or click:
https://www.youtube.com/@NASANightSkyNetwork

SONORAN STARRY NIGHTS

PRESIDENTS NOTES

Greetings everyone,

Our October meeting will take place on October 11th at the Sahuarita library (670 Sahuarita Rd). There is parking behind the library. The meeting room is just to the left as you enter the front door. The meeting will officially start at 12:30pm this month with ZOOM login available by 12:15pm. If anyone has any suggestions for meeting presentations or knows someone we can bring in for a presentation, please let me know.

There will be two public star parties this month. The first will be held on Friday the 24th in Tubac at the Tubac Presidio State Historic Park. The second will be held on Friday the 31st at Historic Canoa Ranch (Halloween customs optional). Check our website for details.

We no longer have access to Canoa Preserve Park for our club star parties. We are now using our new site which is on the way up to Madera Canyon. There is a map to our new site available on our website. Our October club star party is scheduled for the 23rd. Again, check our website for details. If you have any questions about the site, let me know.

Stay safe,

John Dwyer
President

IN THIS ISSUE

MEMBER EQUIPMENT FOR SALE

Have a telescope or other astronomy equipment for sale? Contact John Dwyer with your item(s) to get them listed here.

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The SAS website has a good one-page article from Sky & Telescope that can help get you started. Copy and paste this link:

https://sonoraastronomicalsociety.org/newsletters/

Basic monthly star charts are now available. Look on the website Home page yellow banner.

The website also has a list of suggestions of Planetarium Apps for your phone, several FREE!

THE OCTOBER SKY

SKY HIGHLIGHTS FOR OCTOBER

The evening night sky is gaining more planets this month. **Saturn** reached opposition late last month and is still up most of the night. **Neptune** is still trailing just a few degrees behind Saturn, having reached opposition late last month as well. **Mars** is still in the western evening sky at sunset but is extremely difficult to see. Its disk size is still about 4" and its magnitude is down to about mag +1.5. **Jupiter** is now rising about midnight and its mag exceeds -2. There will be numerous double shadow events of Jupiter's moons this month. It will reach opposition early next year. **Venus** is still very brilliant in the morning sky but is closing in on the Sun. It rises less than 2 hours before sunrise. **Mercury** has now switched to the evening sky and will reach greatest eastern elongation of 24º from the Sun on the 29th. **Uranus** will be rising several hours before midnight as it approaches opposition in late November.

After a few disappointing months for comet watching, we have hit the jackpot this month. There are suddenly three comets under magnitude 10 visible this month. Comet C/2025 A6 (Lemmon) is in the morning sky and supposedly will reach 4th magnitude. However, it is racing towards the Sun and will be lost for viewing by the end of the month, so get out to view it while you can. A new comet C/2025 R2 (Swan) is in the southwestern evening sky. This comet has an orbital period of 22554 years. It will be closest to the Earth on October 20th. It could reach about 6th magnitude. The good news is that it will rise higher in the evening sky as the month goes on so if it stays bright and gets out of the twilight sky brightness, it should be easier to see. The third comet C/2025 K1 (ATLAS) is also visible in the morning. However, it will pass behind the Sun from us and won't be visible until the end of the month.

If you have any solar viewing equipment, the Sun is extremely active now as it has officially reached maximum. As it is getting a little cooler now, break out the solar equipment and take a peek.

OCTOBER MOON/SUN TIMES

DATE	M-Rise	M-Set	M-Phase	Sun-set	Star Party
Wed 10/01	5:17	17:44		18:08	
Thu 10/02	6:11	18:08		18:06	
Fri 10/03	7:05	18:33		18:05	
Sat 10/04	8:00	19:00		18:04	
Sun 10/05	8:57	19:31		18:03	
Mon 10/06	9:56	20:06	Full	18:01	
Tue 10/07	10:56	20:49		18:00	
Wed 10/08	11:56	21:39		17:59	
Thu 10/09	12:53	22:36		17:58	
Fri 10/10	13:45	23:40		17:57	
Sat 10/11	14:31	-----		17:55	SAS Meeting
Sun 10/12	15:11	0:48		17:54	
Mon 10/13	15:47	1:57	3rd Qtr	17:53	
Tue 10/14	16:20	3:07		17:52	
Wed 10/15	16:52	4:17		17:51	
Thu 10/16	17:24	5:28		17:50	
Fri 10/17	17:59	6:40		17:48	
Sat 10/18	18:38	7:54		17:47	
Sun 10/19	19:24	9:09		17:46	
Mon 10/20	20:16	10:21		17:45	
Tue 10/21	21:15	11:28	New	17:44	
Wed 10/22	22:17	12:26		17:43	
Thu 10/23	23:20	13:15		17:42	SAS Star Pty
Fri 10/24	-----	13:55		17:41	
Sat 10/25	0:22	14:29		17:40	
Sun 10/26	1:21	14:58		17:39	
Mon 10/27	2:18	15:24		17:38	
Tue 10/28	3:12	15:48		17:37	
Wed 10/29	4:06	16:12	1st Qtr	17:36	
Thu 10/30	5:00	16:37		17:35	
Fri 10/31	5:55	17:03		17:34	

(S)=Solar

This article is distributed by NASA's Night Sky Network (NSN).

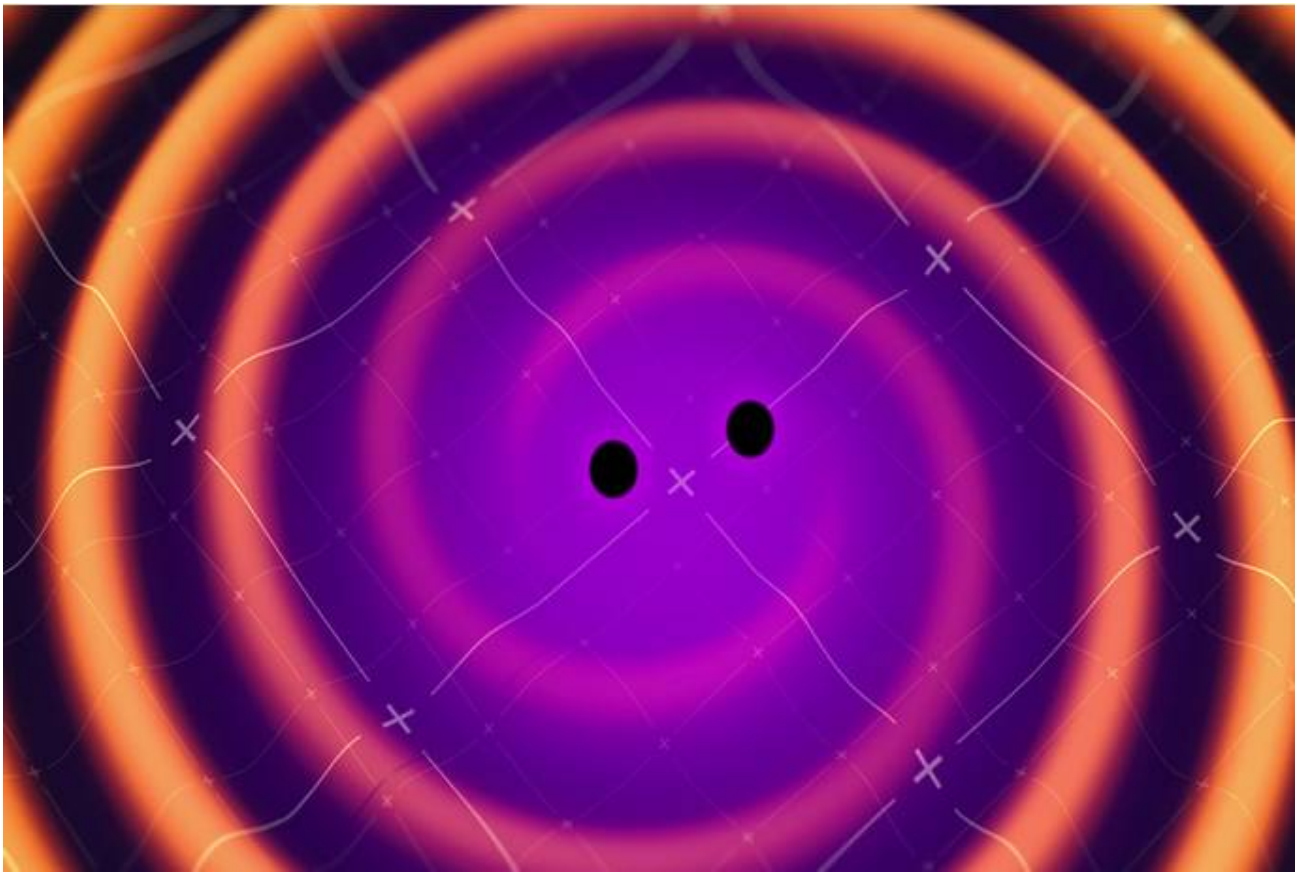
October's Night Sky Notes: Let's Go, LIGO!

By Kat Troche

September 2025 marks ten years since the first direct detection of gravitational waves as predicted by Albert Einstein's 1916 theory of General Relativity. These invisible ripples in space were first directly detected by the Laser Interferometer Gravitational-Wave Observatory (LIGO). Traveling at the speed of light (~186,000 miles per second), these waves stretch and squeeze the fabric of space itself, changing the distance between objects as they pass.

Waves In Space

Gravitational waves are created when massive objects accelerate in space, especially in violent events. LIGO detected the first gravitational waves when two black holes, orbiting one another, finally merged, creating ripples in space-time. But these waves are not exclusive to black holes. If a star were to go supernova, it could produce the same effect. Neutron stars can also create these waves for various reasons. While these waves are invisible to the human eye, this animation from NASA's Science Visualization Studio shows the merger of two black holes and the waves they create in the process.

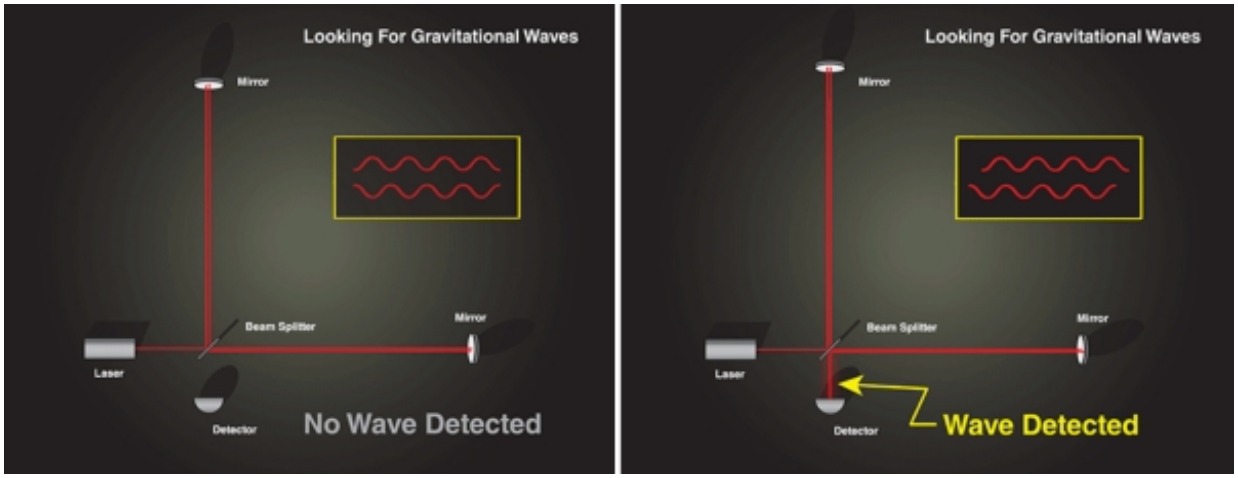


Two black holes orbit around each other and generate space-time ripples called gravitational waves in this image.
Credit: NASA's Goddard Space Flight Center Conceptual Image Lab

(Continued Next Page)

How It Works

A gravitational wave observatory, like LIGO, is built with two tunnels, each approximately 2.5 miles long, arranged in an "L" shape. At the end of each tunnel, a highly polished 40 kg mirror (about 16 inches across) is mounted; this will reflect the laser beam that is sent from the observatory. A laser beam is sent from the observatory room and split into two, with equal parts traveling down each tunnel, bouncing off the mirrors at the end. When the beams return, they are recombined. If the arm lengths are perfectly equal, the light waves cancel out in just the right way, producing darkness at the detector. But if a gravitational wave passes, it slightly stretches one arm while squeezing the other, so the returning beams no longer cancel perfectly, creating a flicker of light that reveals the wave's presence.



Still images of how LIGO (Laser Interferometer Gravitational-Wave Observatory) detects gravitational waves using a laser, mirrors, and a detector. You can find the animated version here. Image Credit: NASA

The actual detection happens at the point of recombination, when even a minuscule stretching of one arm and squeezing of the other changes how long it takes the laser beams to return. This difference produces a measurable shift in the interference pattern. To be certain that the signal is real and not local noise, both LIGO observatories — one in Washington State (LIGO Hanford) and the other in Louisiana (LIGO Livingston) — must record the same pattern within milliseconds. When they do, it's confirmation of a gravitational wave rippling through Earth. We don't feel these waves as they pass through our planet, but we now have a method of detecting them!

Get Involved

With the help of two additional gravitational-wave observatories, VIRGO and KAGRA, there have been 300 black hole mergers detected in the past decade; some of which are confirmed, while others await further study.
While the average person may not have a laser interferometer lying around in the backyard, you can help with two projects geared toward detecting gravitational waves and the black holes that contribute to them:
Black Hole Hunters: Using data from the TESS satellite, you would study graphs of how the brightness of stars changes over time, looking for an effect called gravitational microlensing. This lensing effect can indicate that a massive object has passed in front of a star, such as a black hole.
Gravity Spy: You can help LIGO scientists with their gravitational wave research by looking for glitches that may mimic gravitational waves. By sorting out the mimics, we can train algorithms on how to detect the real thing.
You can also use gelatin, magnetic marbles, and a small mirror for a more hands-on demonstration on how gravitational waves move through space-time with JPL's Dropping In With Gravitational Waves activity!

S.A.S. CLUB OFFICERS

OFFICE/POSITION	NAME	PHONE NO.
Chairman of the Board	Open	
President	John Dwyer	(520) 393-3680
Secretary	Michael Moraghan	(520) 399-3352
Treasurer	John McGee	(520) 207-6188
Star party Coordinator	Open	(520) 303-6920
Newsletter Editor	Joe Castor	(620) 584-4454
Webmaster	Joe Castor	(620) 584-4454
ALCOR* (Currently Inactive)	Inactive	(520) 396-3576
NSN** Representative	Open	(520) 303-6920
Past President Emeritus	Open	
*Astronomical League		
**Night Sky Network		

WHY JOIN SAS

1. SAS Family Membership Fee is only $25.00 per year.
2. SAS monthly newsletter “The Sonoran Starry Nights.”
3. Top-quality astronomy lectures by local astronomers!
4. SAS Discount for Astronomy Magazine $34.00 for 1yr or $60.00 for 2 yr renewed through our treasurer.
5. SAS Discount subscription rate for Sky & Telescope Magazine — self-renewed.
6. RASC Observer’s Handbook at a discount, $30.00.
7. SAS T-Shirts for sale for $10.00—M, L, XL.
8. Member of International Dark-sky Association (IDA).
9. SAS Discount for Astronomy 2020 Calendar $10.00
10. SAS monthly Member Star Parties.
11. SAS Telescope and astronomy book loan programs.
12. SAS outreach to astronomy education in schools.
13. SAS fellowship with other amateur astronomers!

CLUB DUES

Dues (family or individual) are $25 annually, payable each year in the month you initially joined the club. You will receive a reminder in the monthly newsletter e-mail of your due date. You can either pay at the club meeting or mail it to the club’s address (S.A.S., P.O. Box 1081, Green Valley, AZ, 85622).

SAS WEBSITE

If you want to keep up-to-date with club activities, such as star parties, etc., check out our website (and Calendar) at:
HTTPS://sonoraastronomicalsociety.org

SAS STATISTICS & FINANCES

Lifetime Members:	1
Individual & Family Members:	101
Total Membership:	**102**

Bank Balance as of Aug. 31	$ 1,379.84
Deposits / (D/Ws):	$ 75.00 / ($143.88)
Bank Balance as of Sept 30:	**$ 1,310.96**

LOCAL ASTRO-IMAGING GROUP: Sonoran Desert Astro Imagers (SDAI), Larry Phillips, Coordinator

Are you interested in Astrophotography or are you currently involved in imaging the skies? If so, you are invited to join the Sonoran Desert Astro Imagers group. Our meetings focus on improving our skills, helping each other, workshops, and field trips. We meet on Thursdays at 9 AM. The meetings are on Zoom, except once-a-month we get together in-person at the Quail Creek Conference Center. Email notifications are sent to members before each meeting.
Please send your Name and E-mail address to my address below and we'll include you in the emailing notices of monthly meetings; "the when and where meeting notice." Do you have any questions? If so, call me (Larry Phillips) at (520) 777-8027 or email to llp41astro@cox.net. Clear Skies! Larry Phillips

ABOUT THE ASTRONOMICAL LEAGUE

While SAS is no longer an active member of the Astronomical League, a SAS member may join the Astronomical League as an at-large member. What are the advantages to joining the AL?
1. You can receive various observing awards by joining an "observing club" and observing the required number of objects. There are all levels of clubs from beginner to advanced, viewing constellations to deep-sky objects and using either your naked eyes, binoculars, or a telescope. Contact our ALCOR rep Burley Packwood for details.
2. You can get a 10% discount on books purchased through the AL Book Service.
3. You will receive the AL's quarterly "Reflector" magazine which keeps you up to date on all the AL activities.
More info at www.astroleague.org

SAS IS A MEMBER OF IDA

SAS is proud to be a member of the International Dark-Sky Association, supporting the reduction in light pollution around the U.S. and the world.
More info at www.darksky.org

SAS NON-PROFIT STATUS

The Sonora Astronomical Society is a 501 (c) (3) nonprofit charitable organization! SAS has a CERTIFICATE OF GOOD STANDING from the State of Arizona Corporation Commission!

MAGAZINE SUBSCRIPTIONS

To renew your Sky and Telescope Magazine at the Club Rate, you can go directly to their website, or to order it new, or to order or renew Astronomy Magazine, contact the Club Treasurer.

OUR SPONSORS